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DESCRIPTIONS OF NEW OR LITTLE-KNOWN CRUSTACEA IN THE COLLECTION AT THE BRITISH MUSEUM. BY ADAM WHITE, F.L.S., MEMBER OF THE ENT. SOC. OF STETTIN, AND ASSISTANT IN THE ZOOL. DEPT. BRIT. MUSEUM.

Family MAIADÆ.

XENOCARCINUS, White, Appendix to Jukes's Voyage of H.M.S. Fly.

Carapace long, narrow, knobbed above, with a very long thick beak; beak cylindrical, horizontal, forming an elongated cone, truncated at the end, with two small spines at the very extremity, one on each side. Inner antennæ thickish, inserted in a deep groove, which is triangular in front. Eyes with a short thick pedicel. Outer antennæ springing from the under side of beak just in front of the eyes, eight- or nine-jointed; the first joint elongated, somewhat bent, the second not half its length; both furnished at the end with two or three longish setæ; the other joints forming a bristle. The outer pedipalps together occupying a square space; first joint very narrow at the base, the inner edge finely serrated; second joint very long, sides almost parallel, the end gradually pointed; third joint somewhat pyriform, with a tooth at the tip.

Legs cylindrical, some of the joints slightly curved; claws long, slightly curved, the inner edge with many closely-placed minute teeth.

Tail (of female) trapezoidal, hollowed in the middle; the segments, excepting the terminal, joined in one piece.

A genus closely allied to *Acanthonyx*, Latr.

XENOCARCINUS TUBERCULATUS, White.

Carapace with nine tubercles above, placed in three transverse lines, the centre one of the first line double, one placed before the other; the centre one of the third line also double; the two placed transversely; the greater part of the beak covered with minute closely-placed hairs and scales; two short lines of longer hairs on the upper side above and before the eyes; two or three waved longitudinal red lines on the posterior half of carapace, the inner one continued to before the eye.

First pair of legs (in female) short, not reaching to the end of the beak; the claws small, equal, and minutely toothed.

Hab. Long Island, Cumberland Group, Australia. Caught in a seine. Presented to the Museum by J. B. Jukes, Esq., geologist attached to the survey of H.M.S. Fly.

This very interesting form is described in the Appendix to his Narrative of the Voyage. It will be figured in the forthcoming Crustacea of the South Seas, in connexion with Sir J. C. Ross's Voyage.

CHORINUS ACANTHONOTUS, Adams and White, List of Crust. in Brit. Mus., Appendix, p. 123.

Carapace armed with four long spines, the two front ones rather close together at their bases, and directed a little forwards; the two hinder bifid; the forks of the anterior hinder spine diverging laterally, and those of the posterior divaricating longitudinally; three spines on each branchial region, the *anterior* pointed forward, flattened horizontally; the *middle* slender, curved backwards, upwards and outwards, with two sharp-pointed tubercles at its base directed downwards; the posterior with two divaricating slender spines directed backwards, outwards and upwards. Horns of the rostrum long, flattened, close together at the base, gradually diverging, and curved downwards. Orbital margin armed at its superior part with a long bifid spine; on the *anterior* part having a short bifid spine, and on the *posterior* part bounded by a short spine curved forwards. Inferior margin of the orbit nearly wanting, and its external angle ending in a short sharp tooth-like process. The first pair of legs armed both above and below with a trenchant denticulated crest; the other legs cylindrical, and furnished with two long sharp-pointed spines, situated one on each side of the upper part of the extremity of the *third joints*, and diverging upwards and outwards. Tarsi long, curved, and smooth below. Body covered with long thin hairs.

This species differs from *Chorinus aculeatus* (Edwards, Hist. Nat. des Crust. i. p. 316, and De Haan, Fauna Japonica, pl. 23. fig. 2) in the length and position of the spines, which are not tipped with a knob, but sharp-pointed, and in the thin joints of the posterior pairs of legs being armed with two spines. The peculiarity of the long bifid spine above the orbit must also be regarded as a singular characteristic; the front legs are more slender, the horns of the rostrum are longer and less divaricating than in *C. aculeatus*.

Inhabits Eastern Seas; Borneo (Unsang).

The above description was drawn up by Mr. Arthur Adams, Assistant-Surgeon to H.M.S. Samarang. A figure will be published in the forthcoming illustrated work on the zoological results of that voyage, which in the orders Mollusca and Crustacea are particularly striking.

I may remark that the above species enters into *Chorinus* of Prof. Edwards and Dr. De Haan, but seems to me to be very different from *Chorinus* of Leach, founded on a West Indian and South American type.

ZEBRIDA, White.

Carapace flattened, and about as broad as long. Front horizontal, slightly bent down, and formed of two flattened spines, conical, directed forwards, and slightly diverging at their tips. The orbits circular; the peduncle of the eyes very large and thick, broader from side to side than from above downwards; the cornea of the eyes projecting beyond the outer margin of the front, nearly filling up the orbital cavities, the upper margins of which are salient. The latero-anterior borders of the carapace armed with a single, strong, flattened

process; conical, trenchant, broad at the base, their outer edges slightly elevated, with their points curving forwards. The first joint of the external antennæ is very large, long, cylindrical, and the antennæ are covered by the rostrum. The epistome is very nearly similar to that of *Acanthonyx*. The chelæ, shorter than in that genus, are armed with flattened, conical, slightly obtuse spines. The second joint triangular, with an external and internal conical spine, the external very long and directed upwards and forwards; the *third* joint armed with three spines; one superior posterior, and directed forwards; two anterior lateral, and directed outwards and rounded at their extremities; the fourth joint is crested with a sharp flattened spine. The legs are short, thick, very much compressed; the third joint has two large, flattened, conical spines on the front, directed forwards; the fourth joint has but one flat spinous process on its anterior part, and the fifth joint enlarged and furnished posteriorly with a sharp, flat, curved spine directed backwards.

This beautiful genus is very apathetic when alive; in that respect, according to Mr. Adams's observations, resembling *Lambrus*. In the system it is not far removed from *Acanthonyx* and *Huenia*. *The description is from a female.*

ZEBRIDA ADAMSII, White, List of Crust. in Brit. Mus. p. 124.

In colour this species is of a light delicate pink, with dark liver-coloured markings. There is a central line bifurcated anteriorly, where it is lost on the inner bases of the horns of the rostrum, and reaching posteriorly to the last joint of the abdomen, and having external to it a fine, double, somewhat waved line. Extending from the apex of the rostral spines, and meeting at the last abdominal segment, are two broad lines, narrowed in the middle of the carapace; external to this is a fine double line, and on the outside of this is a broad somewhat curved stripe, ending abruptly at the postero-external angle of the carapace; and at the base of the antero-lateral spines is another rather broad linear mark, of the same dark liver-colour.

The third joint of all the legs has two broad, dark, red-brown bands, directed somewhat diagonally across the joint; the fourth and fifth joints have one broad mark of the same colour. The under surface is of a somewhat darker colour. On the outer part of the abdominal segments is a round dark spot. The entire surface of the animal is smooth, hairless, hard, polished and porcellaneous. Eyes black.

A very distinct variety, from about twelve fathoms, in the Sooloo Seas, had the carapace of a light green, with deep red-brown stripes, and the legs and chelæ of a pearly semi-opaque white, and very distinctly banded with deep red-brown.

The specimen from which the foregoing description is taken was dredged from a sandy bottom at about six fathoms water, near the mouth of the Panti River, on the coast of Borneo. The description, it ought to have been remarked, was derived by Mr. Adams

from a living specimen ; but even the dried individual in the Museum collection is very distinctly marked.

Family PAGURIDÆ.

PAGURUS STRIGIMANUS, White.

Red, irregularly spotted with yellow. Eye-peduncles longish, not the length of the anterior margin of the carapace. Carapace with the front part irregularly pitted above, very smooth in the middle, the sides with tufts of long yellow hairs. First pair of legs not much thickened ; on the outside covered with thickly-set tubercles, many of which end in a spine ; the base of these tubercles in front furnished with a tuft of longish yellow hairs ; inside of the hand and of the moveable claw with several slightly raised patches, covered with regular parallel deepish grooves ; the claws black, and slightly hollowed at the end ; the second and third legs with the two last joints furnished with many small black spines and tufts of long yellowish hairs.

Hab. Van Diemen's Land. From Mr. Gunn's collection.

A species somewhat allied to *Pagurus guttatus*, Oliv.

PAGURUS COMPTUS, White.

Whitish, the antennæ ringed with red ; the legs with three or four broad red bands. Carapace smooth, with a few punctures on the side, between which and the middle is an impressed somewhat curved line ; the front edge with a very wide tooth in the middle.

First pair of legs irregular ; the left hand much smaller than the other ; the palmar portion of the larger hand somewhat flattened on the outside, and covered with small depressed warts ; the claws short and thick, the edges of the claws sharp ; the second and third pairs of legs thin, smooth, slightly punctured with a few short bristles ; the fourth and fifth legs very smooth.

Hab. Falkland Islands (Antarctic expedition).

PAGURUS CAVIPES, White, List of Specimens of Crustacea in Brit. Mus. p. 60.

Eye-peduncles short and thick ; eye very large ; scale at the base large and serrated at the end. Carapace with two widish teeth in the front edge, between the outer antennæ and eyes ; a transverse groove near the front edge, the anterior angle with a few short spines ; anterior legs with the left the larger ; the wrist tubercled ; the hand behind the moveable claw tubercled ; the outer edge of the moveable claw and lower edge of hand serrato-dentate ; outside of hand smooth, inside with a few tufts of shortish hairs ; the smaller claw with several rows of hairs in tufts. The second and third pairs of legs somewhat serrated on the upper edge ; the third leg on the left side with the penultimate joint longitudinally grooved on the outside ; the next joint angled and somewhat excavated above, near the upper edge, which is sharpish and somewhat serrated.

Hab. Bramble Key, Australia. Presented by J. B. Jukes, Esq.

Family THALASSINIDÆ.

GEBIA HIRTIFRONS, White.

Beak above depressed, with six or seven longitudinal rows of small tubercles, furnished at the tip with tufts of hairs; stomachal region smooth; false natatory appendage large and ciliated.

Hab. South Seas (Antarctic expedition).

The only specimen which I have seen appears to be very young, as the crust seems hardly formed. It is closely allied to the *Gebia stellata*.

Family ASTACIDÆ.

ASTACUS ZEALANDICUS, White.

Carapace smoothish; beak as long as the peduncle of the outer antennæ, wide, depressed, with a slight keel near the base; the edges thickened, and with five or six small denticulations. Hands somewhat compressed, the outer and inner edges spined, the spines of the inner edge the longer; the hand with many longitudinal rows of hairs in tufts; wrist with three spines on the inner edge, and a deepish groove above; the caudal plates all of a crustaceous substance; the upper side with many small tufts of depressed hairs.

Hab. New Zealand.

Found by the late Mr. Percy Earl, who collected this and many other objects of natural history now in the British Museum. The *Dendrobax Earlii*, White, a very interesting Lamellicorn Beetle, allied to *Ryssonotus* and *Lamprima*, but with much of the aspect of an *Oryctes*, was named in compliment to him in the "Insect Fauna of New Zealand," published in one of the numbers of the 'Zoology of H.M.S.S. Erebus and Terror.' Much was expected from him; but he was drowned in a lamentable shipwreck off the Australian coast.

It is distinct from any species described by Prof. Milne Edwards, Dr. Erichson of Berlin, or Mr. Gray in the 'Appendix to Eyre's Central Australia,' published in 1845.

Family ALPHEIDÆ.

ALOPE, White.

Carapace very wide, dilated on the sides behind, and sinuated in the middle. Beak short, serrated above, buried in a deep groove, which has a spine on each side in front, almost reaching to the tip of the beak. Eyes with a thick short peduncle, situated in a hollow spine on each side, the outer spine shorter than the inner, which, as has been said, is on the side of the beak.

Inner antennæ thick and elongated; second joint much longer than the third, which is slightly cloven at the end and has two terminal styles, the one very long and cylindrical, the other short and compressed.

Outer antennæ situated outside the inner; the lamellated appendage elongated, longer than the thickened basal joints, the last of which has a tuft of hairs at the end; the terminal fillet very long,

half as long again as the whole body. Outer pedipalps very large, nearly equal in breadth throughout; from the base nearly as long as the body; first joint the longest, nearly reaching to the end of the lamellated appendage of the outer antennæ; third joint more than twice the length of the second, compressed, blunted at the end.

First pair of legs two-clawed, thickish, extending a little beyond the second joint of the outer pedipalps; the second pair of legs filiform didactyle; third, fourth and fifth pairs of legs thicker than the second, monodactyle; claws large, serrated below.

Abdomen largish, middle plate of tail with two pairs of small spines, the first pair beyond the middle.

This genus is allied to *Pontonia*, Latreille, but may be distinguished at once by the foregoing characters.

ALOPE PALPALIS, White, List of Crust. in Brit. Mus. p. 75.

The tail has a pinkish hue.

Hab. New Zealand. From the collection of Mr. Earl.

Family ERICHTHIDÆ.

ALIMA APHRODITE, White.

Carapace somewhat narrowed in front, deeply sinuated behind; the frontal horn not quite the length of the carapace; the posterior angles of carapace not much extended. Abdomen more than twice the length of the carapace, exclusive of frontal horn; penultimate joint of abdomen with two spines in the middle behind; middle lobe of tail notched in the middle with a gentle sinuation between the notch and the posterior angle, which is very sharp; the posterior edge is furnished with many short regularly placed teeth, giving it a fringed appearance; outer lobes of tail with the middle appendage prolonged into a sharp spine. Anterior pair of legs quite simple.

Hab. South Seas. Antarctic expedition.

Order AMPHIPODA.

Family GAMMARIDÆ.

EPHIPIPHORA.

Head rather large; antennæ distant from each other, the upper pair with the basal joints very thick and corneous, inserted in a deep notch in front of head; two setæ at the end of each, the outer the thicker. Lower pair of antennæ with the basal joint somewhat elongated and furnished with hairs.

Body much compressed, the lateral appendages on the first eight joints very large, and nearly concealing the legs; the appendage of the fourth joint much dilated behind at the end; eighth to eleventh joints slightly keeled on the back; appendages of the three last joints of the abdomen longish, with short spines on the edge behind.

A genus allied to *Orchestia* and *Talitrus*.

EPHIPPIPHORA KROYERI, White, List, p. 130.

The body is very highly polished, the edges of the segments behind somewhat tinged with yellow; the legs and caudal appendages slightly brownish.

Hab. Van Diemen's Land.

Named as a small compliment to the very eminent Danish naturalist, whose researches among the less studied orders of Crustaceæ are so well developed in his published but not easily accessible works. I regret that, excepting a few foliated plates of the large 'Voyage en Islanda,' &c., I had not seen any part of them when I prepared the 'List of Crustacea in the British Museum.'

APTERA?

Family PYCNOGONIDÆ.

NYMPHON JOHNSTONIANUM, White.

Head with a distinct neck thicker than the articulations between the leg. Eyes two, situated above the insertion of the chelicera, on a rather elevated tubercle, which is pointed at the end. Beak springing from the under side of the head, rounded but not knobbed at the extremity, rather thicker in the middle, with two scales on each side at the base, the extreme apex with a triangular depression.

Chelicera longer than the beak; the two basal joints longer than the third, which is slightly thicker and covered with short hairs; the end with two sharp claws meeting nearly throughout their entire length.

Palpi filiform, 10-jointed; four basal joints small, fifth twice the length of the fourth, and thicker than the sixth, which is equal to it in length; sixth to tenth short, the three last somewhat hairy at the end.

Thorax very narrow, smooth.

Legs eight, slightly hirsute; second and third pairs rather longer than the first; the fourth the shortest; each of the joints with some points at the end.

Tarsi with the first joint very short, the under-side of the second with many spines; claws two, one smaller than the other.

Abdomen somewhat elongate, most slender about the middle, extending to beyond the middle of the second joint of the leg from the base.

In size and general appearance at first sight resembling *Decolopoda australis*, Eights. Boston Journ. Nat. Hist. i. 204. t. 7, but differing from it in the number of the legs, structure of the head and claws, &c.

Hab. South Seas. Capt. Sir E. Belcher, R.N.

This herculean species is named after Dr. George Johnston, of Berwick-upon-Tweed, who among his many valuable works has monographed the British *Pycnogonidæ*. I am aware that Mr. Goodsir has named a *Nymphon Johnstonii* after him, but most probably the present species will be found to form the type of a new genus.

NYMPHON PHASMA, White.

Head with a longish neck, the greater part of which is as thin as or thinner than the articulations between the legs, thickened in front.

Beak thick, blunt, and somewhat knobbed at the end.

Eyes two, situated on a sharp-pointed tubercle, placed between the first pair of legs, somewhat in front of insertion.

Chelicera somewhat longer than the beak, thick, two-jointed; second joint rounded, furnished with two claws which meet throughout.

Palpi elongated, filiform, 10-jointed; three basal joints small; fourth joint very long; fifth joint shorter than the fourth, with a slight hook at the end; sixth joint about the same length as the fifth, but without hook at the end; four last joints short, somewhat curved.

Legs eight, somewhat hirsute, the third leg perhaps shorter than the others.

Tarsi with one claw, the under-side furnished with many small spines.

Hab. South Seas. *Capt.* Sir Edw. Belcher, R.N.

This may possibly be the other sex of the preceding. Neither of them have any trace of oviferous legs.

ADDITIONAL OBSERVATIONS ON CHITONES. BY J. E. GRAY, ESQ., F.R.S. ETC.

Since the publication of my former paper I have continued my researches on these animals, and now propose to add four groups to those which I then described: three of these genera were proposed as sections of the genus *Chiton* in my former paper, but I have since found that they each present peculiar modifications in the structure of the plate of insertion of the valves; and the other is a genus which I had overlooked, though founded on two of the English species of the family. On re-examination I think that the genus *Chiton* should be confined to the species which have a single notch on the plate of insertion of the central valves, and the edge of the plate of insertion pectinately lobed, which is the case with the species marked as belonging to the section * and ** (*Annals*, vol. xx. p. 131.), except *Chiton Barnesii* and *Ch. evanidus*.

1. RADSIA.

Posterior valve entire; margin covered with regularly-disposed imbricated smooth scales; margin of insertion of the central valves pectinately divided, and each furnished with two notches.

Radsia Barnesii. *Chiton Barnesii*, Gray.

2. CALLOCHITON.

The valves keeled, the hinder valve entire; the plates of insertion rather short, thick, of the terminal valves divided into many, and of the central valves into four bifid lobes. Margin with imbricate scales.

* *Margin with lanceolate, elongate, erect, closely-pressed scales.*

Callochiton lævis. *Chiton lævis*, Mont., Lowe, *Z. Jour.* v. t. 5, f. 1.